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THE SOUTHERN PINE BEETLE

A Menace to the Pine Timber of the Southern States

The southern pine beetle is a small brownish or black beetle, about the size of a grain of rice, that attacks the trunks of healthy pine trees, causing their death by excavating long, winding burrows, or egg galleries. These extend through the inner layers of the living bark and mark the surface of the wood. After the tree is dead a new brood of beetles develops in the bark (from the eggs deposited by the parents which killed the tree) and soon emerges to fly in search of other living trees, in which this process of attack and development is repeated.

Causes of Outbreak

Ordinarily the southern pine beetle is a rare insect in our forests. Periodically, however, when climatic conditions are favorable, it rapidly increases to enormous numbers, destroying great quantities of pine, and then disappears just as suddenly. Investigations of the Bureau of Entomology have indicated that abnormally dry spells produce favorable conditions both in weakening the tree and in producing a more suitable situation in the inner bark for the rapid development of the broods of the beetle. The resumption of normal or heavy precipitation effectively checks such development and practically eliminates the beetles from the forests.

Evidence of the Destructive Work of the Beetle

The presence of this beetle in dangerous or destructive numbers is plainly indicated by patches of dying and dead pine which show no evidence of injury by fire or other destructive agencies.

Trees infested by the developing broods are indicated by fading green, greenish-brown, and yellowish-red foliage and can be positively determined by the removal of some bark from the middle of the trunks of the dying trees. Here the characteristic winding s-shaped galleries in the inner bark and on the surface of the wood can be found, and by removing the outer bark the developing broods can be seen.

The trees which have been killed and abandoned by the developed broods of the beetles are indicated by the reddish-brown foliage, except in the case of those fading late in the winter.

Extent of Losses

Extended observations in all of the Southern States between 1891 and 1925 warrant the conclusion that if all of the pine that has been killed during this time by the southern pine beetle were living its stumpage value would amount to over $50,000,000. Studies of the depredations wrought by this beetle in the South Atlantic and Gulf States in the years 1908 to 1911 indicate that at least $2,000,000 worth of pine was killed by it during that time. In 1922 and 1923 extensive outbreaks were again reported or observed, and there is constant danger that the beetle may this year (1925) multiply to the danger point.

Control Measures

Owing to the influence of weather conditions on the southern pine beetle, direct methods of control are recommended with much diffidence. It is evident that these beetles increase from a status of rarity to that of destructive abundance in a remarkably short time. On the other hand, if heavy rains come they as quickly disappear and the effort and money spent in control are wasted. It seems reasonable, however, to believe that if the situation is taken in hand at the outset and the insects thoroughly and persistently destroyed it will be impossible for them to increase as rapidly as if nothing had been done, and considerable timber will be saved.

In such control the main objective is to destroy the broods developing in the bark of the tree, thus preventing them from emerging as beetles and destroying other living trees. This can be accomplished by several methods, as follows:

1. Felling and logging infested trees and removing the logs to a sawmill. The logs should be immediately sawn and the slabs burned.

2. Felling infested trees and placing the logs in water in a sunny location. The water kills the beetles on the under surface and the hot sun destroys those on the top of the log.

Methods 1 and 2 are especially recommended where practical, since they permit salvage of the lumber which otherwise would be rapidly destroyed by borers and timber beetles.

3. Felling and limbing infested trees in a north-and-south direction and after they have lain in this position a few days turning them completely over. This is practical only in a well exposed, sunny situation. After about three days of hot sun the insects are all killed on top and by returning and rolling the logs so as to expose the other side to the sun an effective killing of the beetles on this side also can be obtained.

4. Felling and barking infested trees and burning the bark and tops. This method is dangerous in the summer without extreme precautions to avoid fire but is practical for winter control.

Whatever the method, it is essential that all trees containing the living insects be treated. Some of these will still have green foliage (in which case boring dust or pitch tubes on the bark are evidences of attack) or foliage that has faded only slightly. After the foliage has turned brown (except where it has turned late in the fall) the insects have abandoned the trees.

All portions of the main stem up to a minimum of 2 or 3 inches in diameter should be treated and the limbs either scattered about so that they will be exposed to the sun and quickly dry out or else burned.

Do not treat trees (except for the purpose of salvage) if the bark shows innumerable small holes such as might be produced by a load of shot. The beetles have left the bark of such trees.

Prompt action is necessary. The earlier and more effectively and persistently the work is carried out the better should be the results.

Cooperation of adjacent owners is necessary. It will do little good to clean up one area if adjacent timber acts as a source of reinfestation.

For more detailed advice, and personal examinations when possible, get in touch with the Bureau of Entomology Field Station, Box 1518, Asheville, N. C. All assistance is given free of charge.

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